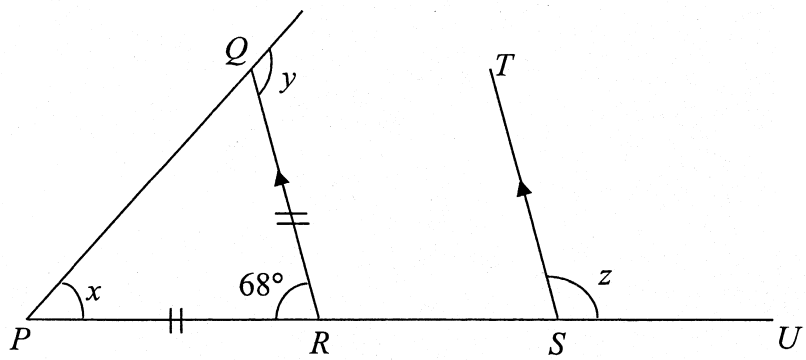
Name : _____( ) Date: _____
Class: _____

Race to SA2 Quiz 5
Basic Geometry
Polygons and Geometrical Construction
[Time: 50 minutes]

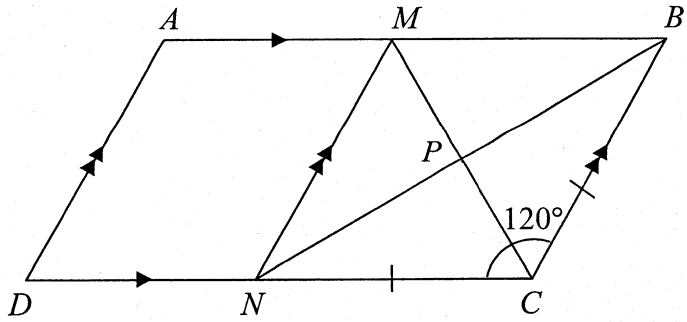
40

1.
Find the sum of the interior angles of a 10-sided polygon. [2]

2.
In the diagram, PQR is a triangle in which $PR = QR$. PSU is a straight line and ST is parallel to RQ. Given that $\angle PRQ = 68°$, find the values of x, y and z. [5]



3.



In the diagram, AB // DC and AD // MN // BC. N is a point on DC such that $CN = BC$. CM and BN are the diagonals of quadrilateral $BCNM$ that intersect at P. $\angle BCN = 120°$.

(a) Name the following quadrilaterals.
(i) $ABCD$ [1]
(ii) $BCNM$ [1]

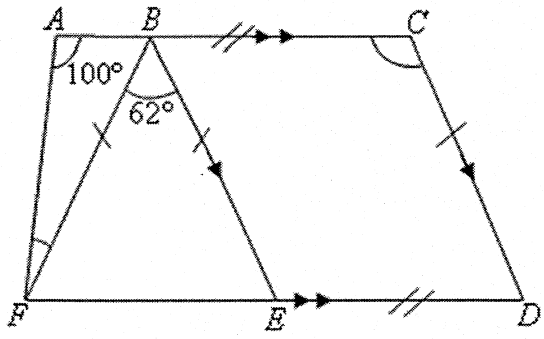
(b) Find
(i) $\angle BPM$. [1]
(ii) $\angle BCM$. [1]
(iii) $\angle BAD$. [1]
State your reasons clearly.

4.

A regular polygon has n sides. The ratio of its interior angle to its exterior angle is 7 : 2.
Calculate
(a) the size of each interior angle, [2]
(b) the value of n. [2]

5.

In the diagram above, AC is parallel to FD, BE is parallel to CD, $\angle FAB = 100°$ and $\angle FBE = 62°$.



Calculate

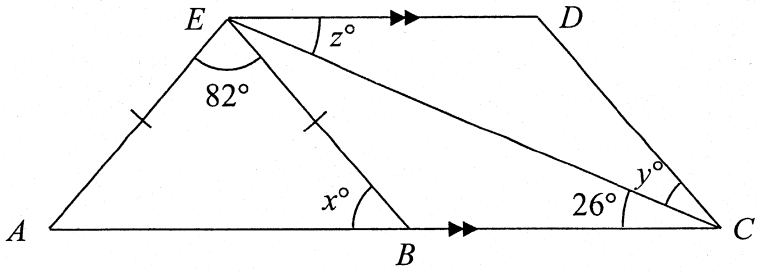
(a) $\angle CBE$. [2]

(b) $\angle BCD$. [2]

(c) $\angle AFB$. [2]

(d) State the special name of the quadrilateral $BCDE$, justify your answer with reason. [2]

6.



In the diagram, $BCDE$ is a quadrilateral and ΔABE is an isosceles triangle.
ED is parallel to BC and EB is parallel to DC, $ED = BC$ and $EB = DC$.
Given that $\angle AEB = 82°$ and $\angle BCE = 26°$,

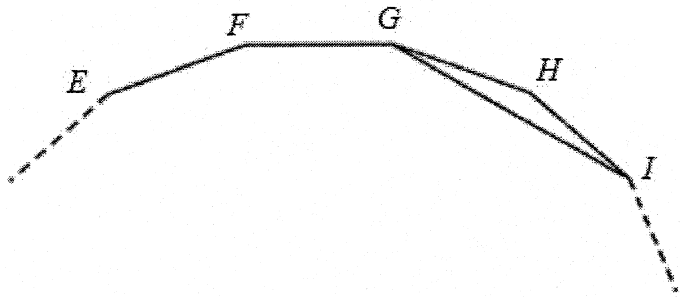
(a) What is the special name of the quadrilateral $BCDE$?
Support your answer with reason. [2]

(b) find the values of x, of y and of z, stating all reasons in your workings. [5]

7.
The diagram shows part of a regular polygon with n sides. Each interior angle of the regular polygon is $156°$.

(a) Find the value of n. [2]

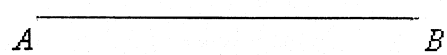
(b) Calculate $\angle FGI$. [2]



8.

(a) In the space below, draw an accurate diagram of the quadrilateral $ABCD$ in which $AB = 5$ cm, $\angle ABC = 75°$, $BC = 3$ cm, $\angle BAD = 130°$ and $AD = 5.5$ cm.
AB has been drawn for you. [3]

(b) Measure and write down
(i) the length of DC, [1]
(ii) $\angle BCD$. [1]



END OF QUIZ